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Review of outstanding issues with respect to the draft regulations on prospecting and exploration for polymetallic sulphides in the Area

Prepared by the Secretariat

1. The purpose of the present paper is to update members of the Council on the outstanding issues with respect to the draft regulations on prospecting and exploration for polymetallic sulphides in the Area (ISBA/13/C/WP.1) in preparation for continued discussion of the regulations at the fourteenth session of the Authority.

I. Background and progress to date[1]

2. The Council will recall that in 1998 the delegation of the Russian Federation had formally requested the Authority to develop regulations for prospecting and exploration for polymetallic sulphides and cobalt crusts. A workshop on these resources was held in June 2000, and in 2001 a document was placed before the Council (ISBA/7/C/2) summarizing the discussion at the workshop and indicating the considerations to be borne in mind in drafting regulations.

3. The Council then decided to request the Legal and Technical Commission to prepare draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich crusts. The Legal and Technical Commission, with assistance from the Secretariat, prepared such a draft in 2003 and 2004, which was subsequently considered by the Council during the eleventh session in 2005.

4. Following a first reading of the draft, the Council asked the Secretariat to clarify certain points, and the Secretariat submitted two technical information papers to the Council in 2006 (ISBA/12/C/2 and ISBA/12/C/3). At its 106th meeting, on 8 August 2006, the Council was provided with an oral briefing on the technical issues dealt with in those papers. The briefing was given by the Secretariat with the assistance of two technical experts, James Hein and Charles Morgan. In addition,

[1] For a chronology, with references to relevant documents, see annex II to the present document.

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Mr. Morgan presented to the Council a report on the preliminary outcomes of a workshop on the technical and economic considerations relating to mining of polymetallic sulphides and cobalt-rich crusts, held from 31 July to 4 August 2006. At the request of the Council, a summary of the workshop recommendations was issued in the form of a document (ISBA/12/C/7). The delegation of the Russian Federation also submitted a draft proposal relating to the draft regulations (ISBA/12/C/6).

5. Following extensive discussion of the way in which the Council would address the outstanding technical issues with respect to the draft regulations, it was agreed that the Secretariat should attempt to revise the draft regulations further in the light of the outcomes of the technical workshop and the presentations, proposals and discussions in the Council during the twelfth session. In revising the draft, it was agreed that separate sets of regulations would be prepared for polymetallic sulphides and cobalt crusts. In considering the revised draft regulations, the Council recommended that priority be given to the regulations relating to polymetallic sulphides.

6. In accordance with the Council's request, the Secretariat prepared a set of draft sulphides regulations in October 2006. The draft was circulated to outgoing members of the Legal and Technical Commission, who were asked to submit their comments by 31 December 2006. Comments were received from three members of the Commission. In the light of those comments, the Secretariat prepared an explanatory note, annexing the revised draft sulphides regulations, for consideration by the Council in 2007 (ISBA/13/C/WP.1). Also in accordance with the Council's request, the Secretariat prepared separate draft regulations relating to cobalt-rich ferromanganese crusts for further consideration by the Legal and Technical Commission (ISBA/13/LTC/WP.1).

7. During the thirteenth session, following a general debate on the revised draft regulations on prospecting and exploration for polymetallic sulphides and briefing by an expert, Mark Hannington, on global exploration models for polymetallic sulphide deposits in the Area, the Council completed a detailed reading of regulations 1 to 43 and agreed on revisions to some of those regulations. Also during the thirteenth session, the Legal and Technical Commission began consideration of the draft regulations relating to cobalt-rich ferromanganese crusts prepared by the Secretariat. The Commission focused its consideration on two issues: the size of the area to be allocated for exploration and the progressive fee system, but considered that the background information available to date was not sufficient to provide a recommendation to the Council on any given system for site allocation for prospecting and exploration. It agreed to continue its work during the fourteenth session.

8. The discussions in the Council, and the revisions that were agreed upon, at the thirteenth session focused primarily on the provisions in the draft regulations dealing with the protection and preservation of the marine environment. There was little discussion of the key outstanding issues, namely, the formula for determining the size of the exploration area, the introduction of a progressive fee system for exploration and the schedule of relinquishment. At the conclusion of the session, an informal text (in English) of the agreed revisions (ISBA/13/C/CRP.1) was provided to all delegations. The Council further agreed that the pending draft regulations (regulations 1(3), 12, 16, 19(2)(a), 21, 24(2), 27, 28(2), 33(2), 35, 36(2) and (3) and

38) would be taken up by the Council in 2008, together with a proposal to insert a review clause.

II. Outstanding issues

9. To date, neither the Council, in relation to polymetallic sulphides, nor the Legal and Technical Commission, in relation to cobalt-rich crusts, has been able to make significant progress with respect to the key substantive issues outlined in the explanatory note to document ISBA/13/C/WP.1. These include:

(a) The formula for determining the size of the exploration area for polymetallic sulphides;

(b) The introduction of a progressive fee system for exploration;

(c) The schedule of relinquishment;

(d) The system for participation by the Authority.

10. In addition, the delegation of France, supported by those of Honduras, Germany and Spain, suggested that, in the light of the inadequate scientific and technical knowledge relating to polymetallic sulphides, the regulations should contain a review clause in the light of improved knowledge. The Secretariat was asked to provide a draft of such a provision, taking into account the discussions in the Council.

11. Although some adjustments had been proposed to the draft regulations contained in ISBA/13/C/WP.1 in the light of the recommendations that emerged from the Authority's workshop on technical and economic considerations relating to mining polymetallic sulphides and cobalt-rich crusts, it appeared that the proposed adjustments, particularly those relating to the size of areas for exploration, did not fully meet the expectations of members of the Council. Furthermore, it was apparent that the three core elements of the proposed regime: namely, the question of the fees to be paid by contractors in return for exclusive exploration rights, the formula for determining the size of exploration areas and the schedule for relinquishment, are so closely interlinked that they need to be considered as a package.

12. The present paper therefore reviews the issues involved with respect to the three core elements of the regime and presents further revised suggestions for discussion in relation to the draft regulations. Although the paper discusses the issues in relation to polymetallic sulphides, it is suggested that the principles involved are of equal relevance to the regime for exploration for cobalt-rich crusts and that the discussion may also be of assistance to the Legal and Technical Commission in its further consideration of regulations relating to exploration for cobalt-rich crusts.

A. Size of the exploration area for polymetallic sulphides

13. Discussions to date suggest that, in the case of polymetallic sulphides, the appropriate size for each exploration block would be 100 square kilometres (km^2), configured as a square measuring 10 kilometres by 10 kilometres (km). Although the possibility of using rectangular blocks had also been raised, it would appear that

the preferred option, for reasons of technical and administrative convenience, would be to use a grid system (in this case corresponding to block sizes of approximately 10 km x 10 km each (0.1 x 60 nautical miles x 1.852 km = 11.11 km grid spacing).

14. In order to provide contractors with adequate opportunities for multi-year exploration, it would be necessary to permit applications for multiple blocks. The technical studies prepared for the Authority to date suggest that up to 100 blocks would be needed to cover the permissive areas in which polymetallic sulphides occur. The remaining issue is whether such blocks should be contiguous or non-contiguous. In the original draft of the regulations, it was proposed that exploration areas should consist of a maximum of 100 contiguous blocks (a block being considered contiguous where it touches another block at any point). The reason for this requirement was the concern that allowing a contractor to select non-contiguous blocks would enable "cherry-picking" of prospective sites along mid-ocean ridges to occur in such a way as to exclude other potential contractors. However, further technical study suggests that, while there should be some broad geographical limit on proximity, "splitting the exploration areas into clusters of non-contiguous blocks would be required in order to ensure that the final clusters can be spread over a large enough area to contain such resources".[2]

15. For these reasons, it is suggested that contractors should be allowed to organize exploration blocks into clusters. An appropriate formula might be to require at least five clusters of contiguous blocks where each cluster must contain not less than five blocks. This would permit a maximum configuration of 20 clusters of five blocks or a minimum configuration of five clusters of 20 blocks. Some suggested that limits on proximity of clusters might include a requirement that all blocks be located within a 5° square (although this may be cumbersome because 1° of latitude at the equator is significantly different from 1° of latitude at 80°N), or a more straightforward, but less precise, requirement that all blocks be located within "the same geographical area".

16. There seems to be no disagreement with the proposal (which is consistent with the advice of technical experts) that the final exploitation area should be up to 2,500 km^2 made up of self-selected sub-blocks of any size, which need not be based on the original block allocation.

B. Application fees

17. The initial draft of the proposed regulations for exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts included provision for the payment of an administrative fee of $250,000 for each application for a plan of work for exploration. This provision was taken directly from the corresponding regulation relating to exploration for polymetallic nodules (ISBA/6/A/18, annex).

18. In the case of polymetallic nodules, each applicant for approval of a plan of work for exploration is required to pay a single fee of $250,000. In accordance with regulation 19, this fee represents the administrative cost for processing the

[2] Study prepared by Mark Hannington and Thomas Monecke, of the University of Ottawa, 21 June 2006, "Global Exploration Models for Polymetallic Sulphide Deposits in the Area: possible criteria for lease block selection and the draft regulations on prospecting and exploration for polymetallic sulphides.

application and is to be reviewed from time to time by the Council in order to ensure that it covers the administrative costs incurred by the Authority in processing the application. The figure of $250,000 was taken from the 1994 Agreement (annex, section 8, para. 3), which provides that with regard to the implementation of annex III, article 13, paragraph 2, of the Convention, the fee for processing applications for approval of a plan of work limited to one phase, either the exploration phase or the exploitation phase, shall be $250,000. It will be recalled in this regard that Annex III of the Convention provides for the payment of a fee of $500,000 for each phase. It will also be recalled that annex III, article 13, paragraph 3, of the Convention (which, by reason of the Agreement, no longer applies) also provided for the payment of an annual fixed fee of $1 million from the date of entry into force of the contract. Part of this fee would also cover the ongoing administrative costs incurred by the Authority in supervising contracts for exploration. It is important to note that these ongoing costs are not covered under the present regime for nodules.

19. The figure of $250,000 in the 1994 Agreement and in the nodules regulations was chosen to be consistent with resolution II of the Third United Nations Conference on the Law of the Sea, paragraph 7 of which provided that the initial fee for registration as a pioneer investor would be $250,000, with a further fee of $250,000 to be paid upon application for a plan of work for exploitation in accordance with the Convention.

20. During the Authority's 2006 workshop on technical and economic considerations relating to mining polymetallic sulphides and cobalt-rich crusts, a number of adjustments were suggested, particularly in relation to the sizes of area to be allocated for exploration and the application fee for exploration. Those recommendations were elaborated and explained in document ISBA/12/C/7. In essence, it was suggested that, in order to provide the necessary incentives for the development of seabed mineral resources, exploration areas should be allocated according to a block system and that along with the introduction of the block system, an alternative should be provided to the single upfront application fee of $250,000. That alternative system should allow contractors to pay a lower initial application fee, combined with an annual fee in respect of each exploration block. The annual fee would increase over time in order to provide an incentive to contractors to proceed more rapidly to relinquish unused blocks and develop the resources (a so-called "progressive fee" system).

21. The scheme recommended by the 2006 workshop was reflected in the revised draft of the proposed regulations provided to the Council in 2007 (ISBA/13/C/WP.1, para. 11). However, taking into account the decision of the Council to proceed to draft regulations for sulphides and crusts separately, there remains a need to consider how the scheme could be applied in detail to each of these two resources.

C. Progressive fee system applied to polymetallic sulphides

22. The idea of a variable or progressive fee per block comes from well-established terrestrial and offshore licensing systems where periodic increases in fees for retaining blocks acts as an incentive for more rapid relinquishment and, thus, development of the resources. This factor was considered particularly

important by the 2006 workshop participants as a mechanism for promoting the development of seabed mineral resources.

23. Many nations levy a fee on economic activities that use land (including offshore lands) in some way, and in many instances this includes mineral sector activities. Such fees are usually based on area and are calculated by multiplying some standard rate for that type of activity times the land area being used for that activity. The rates that are charged vary widely, but are generally small in comparison to the take derived from profit- or income-based taxes during the mining phase of the operation. There are two arguments for this. First, a large surface rental fee that is paid irrespective of profit level would tend to harm mines subject to cyclical price fluctuations. Second, during the exploration phase, the larger the proportion of investors' funds that go towards exploration, the better the chances that an ore body, and a taxable mine, will be located. On the other hand, the fee should be more than nominal. Again, two arguments can be made for this. First, the imposition of a fee will dissuade speculators from taking up ground and blocking out legitimate explorers. Second, as noted above it also is a good mechanism to generate an additional incentive to pursue exploration with due diligence. It is suggested that this is particularly relevant in the case of deep seabed mining because it is apparent that the system currently applicable in the case of polymetallic nodules provides no incentive to contractors to develop resources, but on the contrary provides an incentive to occupy potentially mineable areas, to the exclusion of others, until such time as economic conditions may prove more favourable.

24. The progressive fee option offers a number of potential benefits to the Authority and to contractors. The Authority would benefit from a progressive fee because it would mean that administrative costs could be absorbed and disbursed more easily within the existing budgetary framework. Contractors would benefit because they would not be required to pay a large upfront cost. In addition, if the progressive fee system was combined with the possibility of a more flexible system of relinquishment, contractors would have the opportunity to further reduce exploration costs.

D. Amount of the fee

25. The next critical question is the amount of the fee. Usually, one would expect the progressive fee to be placed at a level which provides the contractor with an incentive to pay by instalments. This suggests that the Authority should offer a progressive fee option at a moderate discount to the fixed fee, combined with the possibility of a more aggressive schedule of relinquishment.

26. The fixed fee is currently $250,000. However, it should be noted that this figure was established in 1983, or even before that during the negotiations leading to the adoption of the Convention. At 1983 values, $250,000 is worth in excess of $400,000 today, which strongly suggests that the fixed fee should be increased at least in line with the changes in the value of money.[3] However, based on the experience to date with respect to exploration for polymetallic nodules, there are other objective reasons for increasing the fee in real terms, including the need to

[3] As of 1 January 1983, the index value of the United States dollar was 117.91. As of 31 March 2008, the index value was 71.76, which means that the equivalent value of $250,000 today, without applying any other factors, is approximately $410,780.

encourage due diligence by contractors, and, as proposed by the Legal and Technical Commission, the need to reflect the cost of ecosystem services provided by the Authority.[4] The ecosystem services included in the Area have not so far been evaluated, but would include, for example, the benefits of avoiding loss of biodiversity.

27. All these factors together would suggest that an appropriate level for the fixed fee would be from about $500,000 to $750,000. Furthermore, this should be applicable to all new applications for exploration for any type of resources, whether polymetallic nodules, polymetallic sulphides or cobalt-rich crusts.

28. If the fixed fee were to be set at, for example, $500,000, the total progressive fee payable over 15 years should amount to a maximum of $800,000.[5] This would be paid in the form of a modest initial payment, followed by an annual fee based on the total number of square kilometres retained by the contractor. The total annual fee payable would be commensurate with the total area retained. As illustrated in the table below, the initial payment is $50,000. Thereafter, an annual fee is applied, based on the number of square kilometres retained multiplied by a factor. The factor is set at $5 during the first five years of the contract, increasing to $10 for the second five years and $20 for the third period of five years. Square kilometres are used to define the area retained, rather than blocks, to allow the contractor greater flexibility in relinquishing parts of blocks in the form of sub-blocks.

Illustration of progressive fee system

Contractor	*Year*	*Upfront payment*	*Fee years 0-5*	*Fee years 6-10*	*Fee years 11-15*	*Total fee payable*
XXXXX	1	50 000	50 000	—	—	100 000
	2	—	50 000	—	—	50 000
	3	—	50 000	—	—	50 000
	4	—	50 000	—	—	50 000
	5	—	50 000	—	—	50 000
	6	—	—	50 000	—	50 000
	7	—	—	50 000	—	50 000
	8	—	—	50 000	—	50 000
	9	—	—	50 000	—	50 000
	10	—	—	50 000	—	50 000
	11	—	—	—	50 000	50 000
	12	—	—	—	50 000	50 000
	13	—	—	—	50 000	50 000
	14	—	—	—	50 000	50 000
	15	—	—	—	50 000	50 000
		50 000	**250 000**	**250 000**	**250 000**	**800 000**

[4] Payment for ecosystem services (PES) is the generic name of a variety of arrangements through which the beneficiaries of ecosystem services pay back to the providers of those services.

[5] The actual future value of $500,000 at 4 per cent over 15 years is $900,000.

E. Schedule of relinquishment and treatment of exploration costs

29. As noted above, to derive the maximum benefit from the progressive fee system, it would be necessary also to modify the current relinquishment schedule to allow for more rapid relinquishment of unwanted acreage. The current fixed schedule for polymetallic nodule exploration, which is based, necessarily, on the pioneer regime, provides no incentive to carry out more rapid exploration. In the case of polymetallic sulphides, it is suggested that the relinquishment provisions should be adjusted to allow contractors to relinquish sub-blocks, of any size, at any time. Such sub-blocks would be designated by the contractor in order to enable the contractor to delineate its final exploration area at the finest possible scale.

30. Another way in which Governments commonly provide incentives to the mining industry is by establishing special provision for the tax treatment of exploration expenses incurred before taxable income is available. In this way, the need for costly exploration programmes preceding the start-up of a mine can be recognized. This concept has been recognized in the regulations for polymetallic nodules, where the standard terms of contract suggest that actual exploration expenditures, declared in annual reports, may be set off against the eventual profits from mining, although this would need to be developed further in the context of regulations governing exploitation.

31. Although a system giving credit for actual and direct exploration costs is reasonable in a situation where the likely costs and time frame for exploration are known, it may be less appropriate in the case of exploration for deep seabed resources. In the case of polymetallic nodules, for example, it has become evident that there are very large disparities in the amounts being spent on exploration by each contractor. In some cases, the expenditure reported in annual reports is greatly in excess of the expenditure proposed in the original programme of activities. Furthermore, for nearly all contractors, the exploration phase has continued far longer than originally intended. Most of the exploration that is being carried out is not being conducted on a commercial basis but as long-term, government-funded research. If this situation is to continue, it is important that some form of limitation is placed on the level of the expenses that contractors may take into account as legitimate exploration expenses. Without any such limitation, the incentive is to continue open-ended research indefinitely, which would eventually be paid for out of royalties that would otherwise accrue to the benefit of the Authority for distribution to mankind.

F. Review clause

32. In the light of the discussions in the Council during the thirteenth session, a proposed review clause has been drafted for consideration by the Council. Since the concern of the Council was to be able to review the Regulations in the light of improved knowledge of the resources, including their environment, it is suggested that there be provision for an automatic review, five years following the approval of the Regulations by the Assembly. The Council would then be able to make such revisions to the Regulations as may be necessary in the light of any new or improved knowledge. However, since the standard terms of contracts already provide a mechanism for making revisions to the contract, any such amendments to

the Regulations would be without prejudice to the rights conferred on any contractor under the provisions of a contract in force at the time of any such revision.

33. At the same time, it is suggested that the review clause also permits a contractor which has entered into a contract for exploration for polymetallic sulphides to request the Council to consider revisions to these Regulations if, in the light of improved knowledge or technology, it becomes apparent that the Regulations are not adequate to enable the contractor to carry out exploration effectively and efficiently. Such a situation may arise, for example, where the contractor finds that the area allocated for exploration is inadequate to enable it to develop a prospective mine site.

III. Recommendations

34. The Council is invited to note the background to the development of the draft regulations on prospecting and exploration for polymetallic sulphides and the progress to date. With respect to the outstanding issues identified in the present paper, the Council is invited to address these matters during the fourteenth session and to consider the issues of the area for exploration, fees and the schedule for relinquishment on the basis of the suggested revisions to ISBA/13/C/WP.1, set out in annex I to the present document.

35. Although the issues raised in the present paper are complex, they all have previously been presented to the Council on a number of occasions. They have also been the subject of discussion in both the Legal and Technical Commission and in the Council. Technical information and briefings have been provided on these issues and updated on a number of occasions.

36. Notwithstanding the complexity of the subject matter, in order for the Council to make further progress on the draft regulations, there are a number of decisions that need to be taken, as follows:

(a) Whether to adopt the block system for allocation of exploration areas as presented in annex I;

(b) Whether to adopt the proposed adjustments to the system for relinquishment outlined in the present paper and annex I;

(c) Whether to adopt the proposed progressive fee system outlined in the present paper and annex I;

(d) Whether to adopt the revised fee levels as proposed in the present paper;

(e) Whether to adopt the review clause proposed in annex I.

Annex I

Suggested possible revisions to relevant provisions in ISBA/13/C/WP.1

Regulation [12]
Total area covered by the application (polymetallic sulphides)

1. For the purposes of these Regulations, a "polymetallic sulphide block" means a cell of a grid as provided by the Authority, which shall be approximately 10 kilometres by 10 kilometres and no greater than 100 square kilometres.

2. The area covered by each application for approval of a plan of work for exploration for polymetallic sulphides **shall be comprised of not more than 100 polymetallic sulphide blocks, which shall be arranged by the applicant in at least five clusters, as set out in paragraph 3 below**.

3. **Each cluster of polymetallic sulphide blocks shall contain at least five contiguous blocks**. Two such blocks that touch at any point shall be considered to be contiguous. Clusters of polymetallic sulphide blocks need not be contiguous but shall be proximate and located within the same geographical area.

4. Notwithstanding the provisions in paragraph 2 above, where an applicant has elected to contribute a reserved area to carry out activities pursuant to article 9 of annex III to the Convention, in accordance with regulation 17, the total area covered by an application shall not exceed 200 polymetallic sulphide blocks. Such blocks shall be arranged in two groups of equal estimated commercial value and each such group of polymetallic sulphide blocks shall be arranged by the applicant in clusters, as set out in paragraph 3 above.

Regulation [21]
Fee for applications (polymetallic sulphides)

1. The fee for processing a plan of work for exploration for polymetallic sulphides shall be:

(a) A fixed fee of **500,000 United States dollars** or its equivalent in a freely convertible currency, payable by the applicant at the time of submitting an application; or

(b) At the election of the applicant, a fixed fee of **50,000 United States dollars** or its equivalent in a freely convertible currency, payable by the applicant at the time of submitting an application, and an annual fee calculated as set out in paragraph 2.

2. **The annual fee shall be calculated as follows:**

(a) **Five United States dollars multiplied by the area factor from the date of the first anniversary of the contract;**

(b) **Ten United States dollars multiplied by the area factor from the date of the first relinquishment in accordance with regulation 27(2); and**

(c) **Twenty United States dollars multiplied by the area factor from the date of the second relinquishment in accordance with regulation 27(3).**[a]

3. **The "Area factor" means the number of square kilometres comprised in the exploration area at the date upon which the periodic payment in question becomes due.**

4. The amount of the fee shall be reviewed from time to time by the Council in order to ensure that it covers the administrative costs incurred by the Authority in processing the application.

Regulation [27]
Size of area and relinquishment

1. The contractor shall relinquish the area allocated to it in accordance with paragraphs 2, 3 and 4 of this regulation. **Areas to be relinquished need not be contiguous and shall be defined by the contractor in the form of sub-blocks comprising one or more cells of a grid as provided by the Authority.**

2. By the end of the fifth year from the date of the contract, the contractor shall have relinquished at least 50 per cent of the original **area** allocated to it.

3. By the end of the tenth year from the date of the contract, the contractor shall have relinquished at least 75 per cent of the original **area** allocated to it; or

4. At the end of the fifteenth year from the date of the contract, or when the contractor applies for exploitation rights, whichever is earlier, the contractor shall nominate an area from the remaining **area** allocated to it to be retained for exploitation.

5. **The contractor may at any time relinquish parts of the area allocated to it in advance of the schedule set out in paragraphs 2, 3 and 4 above.**

6. Relinquished areas shall revert to the Area.

7. The Council may, at the request of the contractor, and on the recommendation of the Commission, in exceptional circumstances, defer the schedule of relinquishment. Such exceptional circumstances shall be determined by the Council and shall include, inter alia, consideration of prevailing economic circumstances or other unforeseen exceptional circumstances arising in connection with the operational activities of the Contractor.

Regulation [44]
Review

1. Five years following the approval of these Regulations by the Assembly, the Council shall undertake a review of the manner in which the Regulations have operated in practice. In the light of the review, the Council may revise any of the provisions of these Regulations, without prejudice to the rights conferred on any contractor with the Authority under the provisions of a contract entered into pursuant to these regulations in force at the time of any such revision.

[a] The 2006 workshop recommended that the fee per block retained should double in the event of an extension of the contract for exploration beyond 15 years, pursuant to regulation 28.

2. A contractor which has entered into a contract for exploration with the Authority pursuant to these Regulations may at any time request the Council to consider revisions to these Regulations if, in the light of improved knowledge or technology, it becomes apparent that the Regulations are not adequate to enable the contractor to carry out exploration effectively and efficiently. In the event that any provisions of these Regulations are amended following such request and consideration by the Council, the Contractor and the Authority may revise the contract in accordance with section 24 of annex 4.

Annex II

Chronology of the development of the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area

Year	*Event*	*Reference*
1998	Russian Federation requests the Authority to develop regulations for prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts.	ISBA/4/A/18
2000	The Authority convenes an international scientific workshop on the status and prospects for seabed minerals other than polymetallic nodules.	Kingston, Jamaica, 26-30 June 2000
2001	Following the adoption in 2000 of the regulations for prospecting and exploration for polymetallic nodules, the Secretariat presents a report to the Council on considerations relating to the regulation of prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts, including a summary of the outcomes of the 2000 workshop and draft model clauses.	ISBA/7/C/2
	Council decides to continue its consideration of the issues at the next session and requests the Secretariat to provide additional background information. Decides also that the Legal and Technical Commission should commence consideration of the regulations.	ISBA/7/C/7
2002	A one-day technical seminar takes place during the eighth session of the Council in order to provide members of the Council with additional information about polymetallic sulphides and cobalt-rich ferromanganese crusts and the marine environment in which they occur.	ISBA/8/A/1 and Corr.1 ISBA/8/C/7
	Legal and Technical Commission begins consideration of the issues associated with the proposed regulations.	ISBA/8/C/6*
2003	Legal and Technical Commission meets for two weeks. During the first week, informal working groups are convened for detailed consideration of specific technical issues.	ISBA/9/C/4

Year	*Event*	*Reference*
	The Secretariat is asked to prepare a consolidated draft of the regulations, taking into account the discussions from 2002 and 2003.	
2004	Legal and Technical Commission completes its work on the draft regulations and submits the outcome of its work to the Council. The Council has insufficient time for substantive consideration of the draft.	ISBA/10/C/WP.1 ISBA/10/C/10
2005	The Council undertakes a first reading of the draft prepared by the Legal and Technical Commission. As a result, the Council identifies substantive issues for further consideration and requests the Secretariat to prepare a revised text incorporating minor revisions arising from the first reading.	ISBA/10/C/WP.1/Rev.1* ISBA/11/C/5 (explanatory notes)
2006	(March) The Authority convenes an international scientific workshop on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna.	Kingston, 26-31 March 2006
	(July) Immediately prior to the twelfth session, the Authority convenes an international workshop on technical and economic considerations relating to mining of polymetallic sulphides and cobalt-rich ferromanganese crusts. A summary of the workshop recommendations is presented to the Council.	ISBA/12/C/7
	(August) During the twelfth session, the Council resumes consideration of the draft regulations. The Secretariat provides additional clarification on critical issues as requested by the Council and provides a technical briefing with the assistance of experts.	ISBA/12/C/2 ISBA/12/C/3 ISBA/10/C/WP.1/Rev.1*
	Russian Federation submits a draft proposal relating to the draft regulations.	ISBA/12/C/6
	By the end of the twelfth session, the Council decides to request the Secretariat to further revise the draft regulations in the light of the outcomes of the technical workshop and of the presentations, proposals and discussions of the Council. The Council decides further that separate sets of	ISBA/12/C/12

Year	*Event*	*Reference*
	regulations will be prepared for polymetallic sulphides and cobalt-rich ferromanganese crusts, and that the draft regulations on polymetallic sulphides should be circulated to the members of the Legal and Technical Commission before the end of 2006, so that the Council can be in a position to give substantive consideration to them in 2007.	
	(October) Secretariat distributes draft regulations on polymetallic sulphides to members of the Legal and Technical Commission. Comments requested by 31 December 2006.	
2007	(March) Secretariat prepares a revised draft of the regulations on polymetallic sulphides, together with an explanatory memorandum, taking into account the comments received from members of the Legal and Technical Commission.	ISBA/13/C/WP.1
	(July) During the thirteenth session, the Council conducts a detailed examination of draft regulations 1 to 43 in document ISBA/13/C/WP.1 and agrees on revisions to some regulations. An informal text (in English) of the agreed revisions is provided to all delegations. The Council agrees to take up draft regulations 1(3), 12, 16, 19(2)(a), 21, 24(2), 27, 28(2), 33(2), 35, 36(2) and (3) and 38 in 2008.	ISBA/13/C/CRP.1 ISBA/13/C/7
	(July) Legal and Technical Commission begins consideration of the draft regulations for cobalt-rich ferromanganese crusts prepared by the Secretariat. The Commission focuses its consideration on two sensitive issues: the size of the area to be allocated for exploration and the progressive fee system, but considers that the background information available to date is not sufficient to provide a recommendation to the Council on any given system for site allocation for prospecting and exploration.	ISBA/13/LTC/1 and ISBA/13/LTC/WP.1